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ABSTRACT

The Computer Assisted Diagnostic Prescriptive Program (CADPP) is a customized databased curriculum management system which permits the user to load the following into a filing/retrieval software system: (1) learning characteristics of individual students (e.g., age, instructional level, learning modality); (2) skill-oriented characteristics of available instructional materials (i.e., readability level, interest level, modality required); and (3) a skills/concepts list. Once these files are loaded, the CADPP cross-references them to the match characteristics of students and materials, and produces customized prescriptions for each participating student. CADPP diagnostic components include the Criterion Referenced Test (CRT) series, developed to allow for a usable and accurate means of diagnosing a student's needs in basic reading and mathematics skills. The CRT results inform teachers of skill areas that are deficient for each pupil, and this information is used to develop personalized educational plans for individual students. The software program can be used with an APPLE II+, IIe, and TRS 80 Models II and IV; two disk drives are required. The program disk has a capacity for 150 skills in two curriculum areas, 100 students per teacher, 150 prescriptions per skill, and 1,600 prescriptions per disk. The descriptive pamphlet includes a description of the National Diffusion Network Division, which makes validated educational programs available for adoption by schools, colleges, and other institutions; a CADPP adoption agreement; sample costs connected with the adoption of CADPP; and a CADPP awareness session participant feedback form and material rating form. Validated by the National Institute of Education and the U.S. Office of Education in 1979, the system is currently used in over 500 schools in 35 states. Its greatest utilization has been with ECIA Chapter 1 students and special education, basic skills competency, gifted and talented, and adult basic education programs. (JB)

Computer Assisted Diagnostic Prescriptive Program

in Reading and Mathematics

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An Exemplary Micro-computer Management Program and a Developer/ Demonstrator Project National Diffusion Network

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INTRODUCTION

What is the National Diffusion Network Division?

The National Diffusion Network Division, or NDND, is a federally funded system that makes exemplary educational programs available for adoption by schools, colleges, and other institutions.

It does so by providing dissemination funds to exemplary programs for two purposes: (1) to enable the programs to make public and nonpublic schools, colleges, and other institutions aware of what they offer, and (2) to enable the programs to provide inservice training, follow-up assistance, and in some cases, curriculum materials to schools and others that want to adopt them.

NDND also provides funds to persons known as facilitators, whose job is to serve as matchmakers between NDND programs and schools and organizations that could benefit from adopting the NDND program.

Before a program can become part of the NDND, it must pass the Joint Dissemination Review Panel.

What is the Joint Dissemination Review Panel?

Established by the Department of Health, Education, and Welfare and continuing in the Department of Education, the Joint Dissemination Review Panel examines evidence from education projects or products that claim effectiveness in attaining their goals. Any project or product that the panel approves is eligible for federal dissemination funds.

The panel was first appointed in 1972 (when it was called the Dissemination Review Panel) as part of an effort to make available in classrooms throughout the country good programs that had been developed at the local level with federal money. Review by the panel was a way to ensure that federal dissemination funds would go only to programs that could prove their effectiveness and transportability and also give national recognition to the programs. It was also seen as a means of internal review for the Department of HEW and as an aid to local schools, which could be assured that a panel-approved program was worthy of adoption.

Originally a part of the U.S. Office of Education, the panel was enlarged in 1975 to include representatives from the National Institute of Education and so became the Joint Dissemination Review Panel.

How does NDND assure that its programs are effective and worthy of replication in other schools?

Before a program can become part of the NDND, it must *"pass"* the Joint Dissemination Review Panel. Programs requesting a review by the panel must prove that they are effective in the school in which they were developed and that they could be used in other schools.

What makes the NDND programs different from commercial products?

Several important things. NDND does not just hand something new to a school and expect the school to figure out how to use it. Instead, NDND program directors help local schools adopt or adapt their program to suit each school's unique needs. To do that, the director of the program chosen by the school provides inservice training (lasting from one day to a week or more) to staff members in the adopting school who will have to make the program work there. The director also provides follow-up assistance in the form of additional training, visits, telephone consultation and newsletters. Sometimes, a director or an NDND facilitator arranges for all adopters of a particular program in a region or state to form a "network" so they can share successful approaches and solve common problems. All NDND services are provided at little or no cost to adopters.

How is an NDND program adopted?

Each state has an NDND funded facilitator project, with a director who is responsible for helping schools and other organizations learn about and adopt NDND programs. State Department of Education personnel can supply the name, telephone number, and address of the facilitator in their state. Often, for example, the facilitator will hold "awareness conferences" featuring one or more NDND programs and invite educators to attend. They also work with educators in pinpointing the needs in a particular school and in determining which NDND program, if any, offers a solution. When a school decides to adopt an NDND program, the facilitator arranges for the program's developer to provide inservice training to staff in the adopting school. In addition, if a school requires financial assistance to make an adoption, the facilitator usually knows about funding sources and how to apply for a grant under various federal or state programs. Some facilitators sponsor meetings to teach school administrators how to apply for a grant.

What is the CADPP?

The Computer Assisted Diagnostic Prescriptive Program (CADPP) is a computer-managed program in reading and mathematics, which was validated by the National Institute of Education and the United Stated Office of Education in the fall of 1979. Since that time, the CADPP has been funded

by the National Diffusion Network, under the United States Department of Education to provide materials and inservice training to educational service providers in replicating its program.

The CADPP is a data-based management system which allows a user to load: 1) learning characteristics of individual students, to include age, instructional level, and identified learning modality, if applicable; and 2) skill oriented characteristics of available instructional materials, to include readability level, interest level, and modality utilized, into a computerized filing/retrieval system. Once these files are loaded, the CADPP cross-references these files to match similar student characteristics to material characteristics, and produces customized prescriptions (personalized educational plans) for each participating student, based upon the reinforcement skills requested by the instructor.

In addition to generating prescriptions, the CADPP tracks an individual child's yearly activities and can produce cumulative reports for: skills instructed and skills mastered, with date of mastery; and total listings of all instructional materials utilized during the year, or a designated period of time.

At little or no cost, the CADPP's software program, to include on-site inservice training from a CADPP certified trainer, can be installed in a school or a school district.

Training generally entails one to two days; and the software can be copied within the adopting district, with revisions and updates forwarded at no extra charge.

To date, the CADPP user's group consists of over 500 schools in 35 states, to insure a continuous design for program refinement and improvement.

CADPP DIAGNOSTIC COMPONENTS

The Criterion-Referenced Test (CRT) series was developed to allow for a usable and accurate means of diagnosing a student's needs in basic reading and mathematics skills. The CRT results inform teachers of skill areas that are deficient for each pupil, and this information is used to develop personalized educational plans for individual students. Profiles are used to record those skills mastered and those skills still in need of additional instruction, as documented by the CRT.

The Criterion-Referenced Tests are summative in nature and are not intended to reflect all of the skills and concepts in a curriculum area. The tests have been standardized according to:

1. format
2. administation procedures
3. interpretation

4. teacher established validity
5. reliability

The CRT's can aid teachers and administrators in two important ways: (1) determine need, and (2) determine mastery. When administered at the beginning of a program (pre-test), the learner needs can be assessed, and the student can be properly placed in the educational program. At the conclusion of the program (post-test), the mastery of skills can be determined. By comparing the pre-test and post-test results, gains can be determined, which provide an indication of program effectiveness.

CADPP CRT SERIES

Reading	Grade	Mathematics	Grade
Comprehension II	2-3	Concepts and Computation II	2-3
Comprehension III	4-6	Computation IIT	3-4
Comprehension IV	7	Concepts	4-6
Comprehension V	8	Computation III	4-6
Comprehension VI	9		
Related Skills II	2-3		
Related Skills II	4-6		
Phonics II	2-3		

A series of formative tests (4-10 items) is also available for all skills listed in the CADPP skills continuum.

CADPP CRT's and Formative Tests are available to adopter upon request, however, they are not a requirement for implementation.

CADPP'S PRESCRIPTIVE COMPONENTS

Two files are maintained in the computer's data bank: one on the cross-correlations of a teacher's instructional materials to a skills list; and one on the age level, instructional level, and learning modality of his/her individual students. Teachers and/or clerical staff will load this information into the computer for later retrieval, in the form of student prescriptions.

Computer Files and Summary Reports

Along with the individual student prescriptions, additional reports and summaries can be obtained from the CADPP software. These reports and summaries are listed as follows.

Reading Skills File. This report lists 77 CADPP basic reading skills, additional skills up to a total of 150 can be added.

Mathematics Skills File. This report lists 121 basic Mathematics skills; additional skills up to a total of 150 can be added.

Student File. This file lists the students by class, age, birthdate, gender, learning modality and instructional level; maximum of 100 students per teacher can be listed.

Activity (Prescription) File List. This report lists the prescription name,

type of activity, learning station, instructional level, interest level, gender, learning modality, equipment needed, and time required.

Progress Report. This report lists the students, prescriptions completed, and skills mastered.

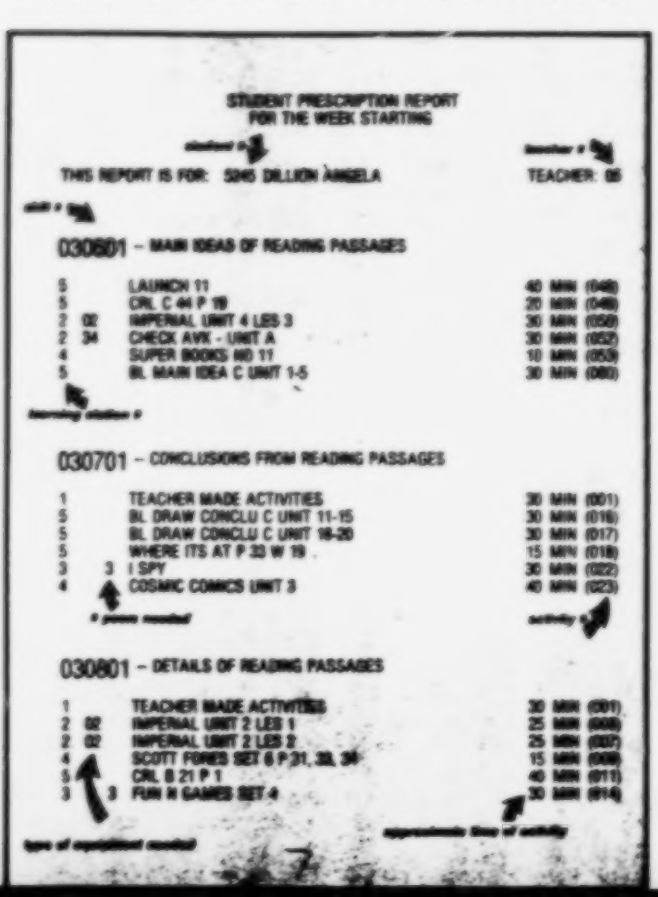
Requests Report. This report is a summary of prescription requests for each student.

Student Progress Report. This report is a classroom summary of skills requested and the highest activity or prescription completed.

Classroom Prescription Summary. This report lists the name of all the students working on the same activity or prescription.

Skill Mastery Report. This report is a summary of all skills mastered by a student to date.

CADPP Sample Computer Prescription Print Out



STUDENT PRESCRIPTION REPORT
FOR THE WEEK STARTING

THIS REPORT IS FOR: 5345 DILLION ANGELA — TEACHER: 05

030801 – MAIN IDEAS OF READING PASSAGES

5		LAUNCH 11	40 MIN (048)
5		CRL C 44 P 19	20 MIN (049)
2	02	IMPERIAL UNIT 4 LES 3	30 MIN (050)
2	34	CHECK AVK - UNIT A	30 MIN (052)
4		SUPER BOOKS WD 11	10 MIN (053)
5		BL MAIN IDEA C UNIT 1-5	30 MIN (060)

030701 – CONCLUSIONS FROM READING PASSAGES

1		TEACHER MADE ACTIVITIES	30 MIN (001)
5		BL DRAW CONCLU C UNIT 11-15	30 MIN (016)
5		BL DRAW CONCLU C UNIT 16-20	30 MIN (017)
5		WHERE ITS AT P 33 W 19	15 MIN (018)
3	3	I SPY	30 MIN (022)
4		COSMIC COMICS UNIT 3	40 MIN (023)

030801 – DETAILS OF READING PASSAGES

1		TEACHER MADE ACTIVITIES	30 MIN (001)
2	02	IMPERIAL UNIT 2 LES 1	25 MIN (006)
2	02	IMPERIAL UNIT 2 LES 2	25 MIN (007)
4		SCOTT FORES SET 6 P 31, 33, 34	15 MIN (008)
5		CRL B 21 P 1	40 MIN (011)
3	3	FUN N GAMES SET 4	30 MIN (014)

CADPP Computer Software Requirements

Minimum micro-computer requirements to operate the CADPP software programs require 2 disc drives with the Apple II and IIe, and the Radio Shack TRS 80 Models III and IV.

CADPP ADOPTION AGREEMENT

Adopting School System: _____

Contact Person: _____

Date Agreement Signed: _____

To become a CADPP adoption site, the above named school system agrees to:

1. Commit to the CADPP philosopy of diagnostic-prescriptive instruction.
2. Organize a pull-out program or a self-contained resource room, staffed with a certified teacher.
3. Pre and post test students utlizing the CADPP test series or a CADPP approved test. Approval must be received by the CADPP Evaluator prior to training.
4. Agree to submit the above test data to the CADPP Evaluator upon completion of each school year.
5. Purchase the CADPP computer software program, at $500 per adopting district, with freedom to copy within the district only.
6. Utilize the CADPP software for one complete year prior to any attempts at program changes, with all changes approved prior to the activity by the CADPP Director.
7. Provide a CADPP trainer with one day of training in the adopting district. Participants at the training should be the staff assigned to implement the program, with the administrator present who will supervse the adoption and serve as a liaison between the local staff and the CADPP.

In return, the CADPP agrees to:

1. Provide the training with travel/per diem costs only charged to the adopter. Training will include installation of all core components, with emphasis on the instructional areas and usage of computer software.
2. Provide all necessary materials for adoption at cost.
3. Be available, at travel/per diem costs only, for a mid-year monitoring visit, at which expense must be assumed by the adopter.
4. Forward evaluation results back to the adopter, based on analysis of test data of participating students in that district.
5. Be available by mail or telephone consultation as needed by adopter.

_____, Adopting Administrator

_____, CADPP Director

COST CONCERNING ADOPTING OF CADPP

If activities occur within the grant period of the CADPP, no consultive fees are charged for CADPP staff members, however, travel and per diem costs are generally charged the adopting school district.

CADPP Materials Cost

*CADPP computer software
(BASIC version available on diskettes and hard copy) 500.00

CADPP Criterion-Referenced Test Series
Tests are available in Phonics, Related Skills, and Comprehension in Reading; Concepts and Computation in Mathematics (tests are nonconsumable, therefore a one-time charge, and can be shared among classrooms for testing on a rotating basis) ..... 3.00 each

CADPP Criterion-Referenced Test Teacher's Manual ..... 5.00 each

CADPP Criterion-Referenced Test Answer Key ..... 1.00 each

CADPP Profile Sheets Manual ..... 3.00 each

CADPP Formative Tests Manual
Reading ..... 25.00 each
Mathematics ..... 25.00 each

CADPP Training Manual ..... 5.00 each

10% Shipping Charge on all orders, excluding the software, which carries a shipping charge of $5.00.

*A required material for CADPP adoption, with remaining materials recommended to insure quality implementation.

Included in the Adoption Agreement, the CADPP staff will conduct an on-site 1-day training session for adopters with training to include installation of testing program, management approach, and coding techniques. The CADPP staff will assist the adopting school district to provide an additional one day of monitoring and/or re-training for travel, per diem cost only, as scheduled by the adopter and CADPP.

CADPP Awareness Session
Participant Feedback Form

Please check appropriate box:
☐ Administrator ☐ Teacher ☐ Consultant ☐ Other

School System _____ City _____

State _____ Zip _____ Telephone _____

Date _____

Please circle your response for each statement.

1. The purpose of the awareness session was clearly communicated.	No	Undecided	Yes
2. The visual aides were appropriate for the purpose of the session.	No	Undecided	Yes
3. The session was well organized.	No	Undecided	Yes
4. The awareness materials appeared to be well organized and written to provide additional CADPP information.	No	Undecided	Yes
5. The relationship with the National Diffusion Network was adequately presented.	No	Undecided	Yes
6. CADPP adoption procedures were adequately described.	No	Undecided	Yes
7. The presenter(s) were enthusiastic and exhibited good presentation skills.	No	Undecided	Yes
8. As a result of the session, I feel that I have an awareness of the CADPP project.	No	Undecided	Yes

How would you rate the presentation overall?
☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good

Would you like to have a CADPP staff member or your State Facilitator contact you regarding a CADPP adoption?
☐ Yes ☐ No

Suggestions for improvement: _____

_____

_____

_____

_____

CADPP Awareness Material Rating Form

Name _____ Position _____

Address _____ City _____ State _____

Date _____ Zip _____ Telephone _____

Read the enclosed CADPP Awareness material, then check each of the items below. Write comments on separate sheet and forward the form and comments to: **CADPP Program, P.O. Box 292, Buckingham County Schools, Dillwyn, VA 23936.**

Awareness Material Objective: to inform the reader about the:

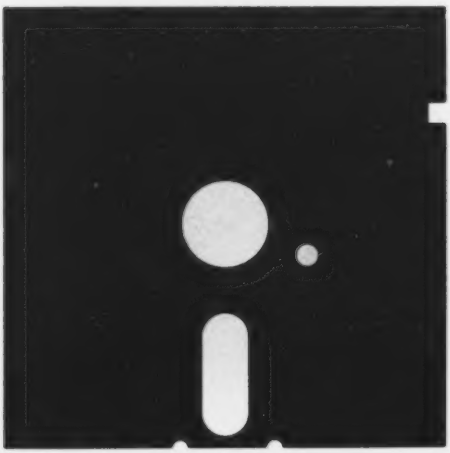
	Satisfactory	Rework
1. National Diffusion Network	_____	_____
2. Origin of CADPP	_____	_____
3. CADPP Diagnostic Elements	_____	_____
4. CADPP Prescriptive Elements	_____	_____
5. CADPP National Sites	_____	_____
6. Adoption Costs	_____	_____
7. Adoption Agreement	_____	_____

_____

Signature

NOTES

For more information contact:
DEBRA J. GLOWINSKI
Director of Federal Programs
Buckingham County Public Schools
P.O. Box 292
Dillwyn, Virginia 23936
Telephone (804) 969-3111



Rev. 1/86

AN EXEMPLARY COMPUTER MANAGEMENT SYSTEM FOR INSTRUCTION

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The Computer Assisted Diagnostic Prescriptive Program (CADPP) is a customized data-based curriculum management system which permits the user to load: (1) learning characteristics of individual students (ie. age, instructional level, learning modality, etc.); and (2) skill-oriented characteristics of available instructional materials (ie. readability level, interest level, modality required); and (3) a skills/concepts list into a file/report software system.

After the student characteristics file, the instructional materials file, and the skills/concepts file are loaded, the CADPP software system cross-references these files to match similar student characteristics to instructional materials characteristics for each skill/concept selected. The microcomputer prints a customized student prescription (personalized educational plan) for each participant.

In addition to printing individual student prescriptions, the CADPP program tracks individual student activities to include: (1) skills taught, (2) skills mastered, and (3) prescriptions completed. Individual and class summaries are provided.

The CADPP software program is nationally validated for reading and mathematics and is a member of the National Diffusion Network, sponsored by the U. S. Department of Education. The software program is currently used by 897 school systems in 40 states.

The software program operates on the Apple II+, Apple IIe, TRS 80 Models III and IV. Two disk drives are required, an 80 column card, 64K, a monitor, and a printer. The program disk has a capacity for 150 skills in two curriculum areas, 100 students per teacher, 150 prescriptions per skill, and 1,600 prescriptions per disk.

The software can be used with any curriculum area. Its greatest utilization has been with ECIA Chapter 1 students, Special Education Programs, Basic Skills Competency Programs, Gifted and Talented Progams, and Adult Basic Education Programs. Programs are currently operating in grades 2-12, junior colleges, and prisons.

The software program is a necessity for diagnostic-prescriptive teaching and manages paperwork, so the teacher has more time to teach. The program is easily customized to a school district's skills list and instrucional materials. The program provides a systematic monitoring of student progress, teacher instruction, and skill mastery. Summative and formative criterion referenced tests are available in reading (grades 2-9) and mathematics (grades 2-6) to assist the teacher.

The program evaluation model requires pre and post testing in the Spring of each year with a norm-referenced test. The test data is converted to the Normal Curve Equivalent (NCE). A five NCE minimum gain is expected in the reading and mathematics programs currently operating in ECIA Chapter 1 Programs. For the 1984-85 school year, average NCE gains in reading for the Buckingham County Schools (Virginia

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Developer/Demonstration Site) were six or greater in grades 2-7. NCE gains in mathematics were eight or greater. The SRA Achievement Test Series and the California Achievement Test Series have been utilized since 1980 for evaluation purposes.

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